

What is claimed is:

1. A method for managing a plurality of high-availability-aware components in a networked computer system comprising:
 - registering the plurality of high-availability-aware components to be managed; and
 - dynamically allocating roles and assignments to one or more of registered components of the plurality of high-availability-aware components to achieve a desired redundancy level based on component type information.
2. The method of claim 1, further comprising:
 - providing information to the registered components so that related components among the registered components may communicate to achieve the desired redundancy level.
3. The method of claim 2, further comprising:
 - maintaining software release domain information,
 - wherein the software release domain information is provided to the related components during the providing step.
4. The method of claim 1, further comprising:
 - performing administrative actions on the registered components in response to a request from an external management agent.

5. The method of claim 1, further comprising:
responding to an error by changing roles and assignments of the
registered components.

6. The method of claim 5, further comprising:
maintaining component relationship information,
wherein the component relationship information is used during the
allocating step and the responding step.

7. The method of claim 6, wherein the component relationship
information includes assignment-level, component-level, and assignment-to-
component relationships.

8. The method of claim 5, wherein the responding step uses
protection group information.

9. The method of claim 5, wherein the responding step further
comprises:
choosing an appropriate response; and
altering assignments and roles of the registered components according
to the appropriate response.

10. The method of claim 9, wherein the appropriate response includes restart, fail-over, switch-over, node fail-over, and node switch-over.

11. The method of claim 1, wherein the roles allocated to the one or more of the registered components include off-line, spare, primary, secondary, and quiescing.

12. The method of claim 1, further comprising:
maintaining component relationship information,
wherein the component relationship information is used during the allocating step.

13. The method of claim 12, wherein the component relationship information includes assignment-level, component-level, and assignment-to-component relationships.

14. The method of claim 1, wherein the allocating step uses protection group information.

15. The method of claim 1, wherein the allocating step assigns a specific role and assignment to a self-determining component in the registered components.

16. The method of claim 1, wherein the plurality of high-availability-aware components include stand-alone components, proxied components, and proxy components.

17. The method of claim 1, wherein the component type information includes functional attributes, recovery parameter attributes, component instance level attributes, and component assignment level attributes.

18. A method of allocating an assignment in a networked computer system comprising;

registering a plurality of components, wherein the plurality of components are high-availability aware;

allocating roles to registered components of the plurality of components;

allocating the assignment to a first component selected from the registered components based on component type information of the first component;

changing a role of the first component to primary;

determining a redundancy level based on the component type information;

allocating the assignment to a predetermined number of secondary components selected from the registered components based on component type

information of the secondary components, wherein the predetermined number is based on the redundancy level;

changing roles of the predetermined number of secondary components to secondary; and

notifying the first component about the predetermined number of secondary components and the predetermined number of secondary components about the first component.

19. The method of claim 18, further comprising:

detecting an error affecting the first component;

selecting a new primary component from the predetermined number of secondary components; and

changing a role of the new primary component to primary.

20. The method of claim 19, further comprising:

instructing the first component to communicate information to the new primary component.

21. The method of claim 18, further comprising:

detecting an error affecting the first component; and

restarting the first component.

22. The method of claim 18, further comprising:

maintaining software release domain information,

wherein the software release domain information is included in the
notifying step.

23. The method of claim 18, further comprising:

performing administrative actions on the registered components in
response to a request from an external management agent.

24. The method of claim 18, further comprising:

maintaining component relationship information;

wherein the component relationship information is used in the two
assignment allocating steps.

25. A method of allocating an assignment to a plurality of high-

availability-aware components in a networked computer system, the method
comprising;

registering the plurality of high-availability-aware components;

allocating roles to registered components of the plurality of high-
availability-aware components;

maintaining component relationship information;

selecting a first component from the registered components based on component type information and the component relationship information;

allocating the assignment to the first component;

changing a role of the first component to primary;

determining a redundancy level based on the component type information;

selecting a predetermined number of secondary components from the registered components based on component type information of the secondary components and the component relationship information, wherein the predetermined number is based on the determined redundancy level;

changing roles of the predetermined number of secondary components to secondary; and

notifying the first component about the predetermined number of secondary components and the predetermined number of secondary components about the first component.

26. The method of claim 25, further comprising:

detecting an error affecting the first component;

selecting a new primary component from the predetermined number of secondary components using the component relationship information; and

changing a role of the new primary component to primary.

27. The method of claim 26, further comprising:

instructing the first component to communicate information to the new primary component.

28. The method of claim 25, further comprising:

maintaining software release domain information, wherein the software release domain information is included in the notifying step.

29. The method of claim 25, further comprising:

performing administrating actions on the registered components in response to a request from an external management agent.

30. A computer program product for managing a plurality of high-availability-aware components in a networked computer system, the computer program product comprising:

computer readable program code configured to register the plurality of high-availability-aware components to be managed;

computer readable program code configured to dynamically allocate roles and assignments to one or more of registered components of the plurality of high-availability-aware components to achieve a desired redundancy level based on component type information; and

a computer readable medium having the computer readable program codes embodied therein.

31. The computer program product of claim 30, further comprising:
computer readable program code configured to provide information to the registered components so that related components may communicate to achieve the desired redundancy level.

32. The computer program product of claim 30, further comprising:
computer readable program code configured to respond to an error by changing roles and assignments of one or more of the plurality of components.

33. A computer readable medium configured to embody computer programming instructions for managing a plurality of high-availability-aware components in a networked computer system, the computer programming instructions comprising:

registering the plurality of high-availability-aware components to be managed; and

dynamically allocating roles and assignments to registered components of the plurality of high-availability-aware components to achieve a desired redundancy level based on component type information.

34. A computer program product for allocating an assignment in a networked computer system, the computer program product comprising

- computer readable program code configured to register a plurality of high-availability-aware components;
- computer readable program code configured to allocate roles to registered components of the plurality of high-availability-aware components;
- computer readable program code configured to allocate the assignment to a first component selected from the registered components based on component type information of the first component;
- computer readable program code configured to change a role of the first component to primary;
- computer readable program code configured to determine a redundancy level based on the component type information;
- computer readable program code configured to allocate the assignment to a predetermined number of secondary components selected from the registered components based on component type information of the secondary components, wherein the predetermined number is based on the redundancy level;
- computer readable program code configured to change roles of the predetermined number of secondary components to secondary;
- computer readable program code configured to notify the first component about the predetermined number of secondary components and the predetermined number of secondary components about the first component; and

a computer readable medium having the computer readable program codes embodied therein.

35. The computer program product of claim 34, further comprising:
computer readable program code configured to detect an error affecting
the first component;

computer readable program code configured to select a new primary
component from the predetermined number of secondary components; and

computer readable program code configured to change a role of the new
primary component to primary.

36. A system for managing a plurality of high-availability-aware
components in a networked computer system, the system comprising:

means for registering the plurality of high-availability-aware
components to be managed; and

means for dynamically allocating roles and assignments to one or more
of registered components of the plurality of high-availability-aware components
to achieve a desired redundancy level based on component type information.;

37. The system of claim 36, further comprising:

means for responding to an error by changing roles and assignments of
one or more of the registered components.

38. The system of claim 36, further comprising:

means for providing information to the registered components so that related components may communicate to achieve the desired redundancy level.

39. The system of claim 36, further comprising:

means for performing administrative actions on the registered components in response to a request from an external management agent.

40. A system for allocating an assignment in a networked computer system, the system comprising:

means for registering a plurality of high-availability-aware components;

means for allocating roles to registered components of the plurality of high-availability-aware components;

means for allocating the assignment to a first component selected from the registered components based on component type information of the first component;

means for changing a role of the first component to primary;

means for determining a redundancy level based on the component type information;

means for allocating the assignment to a predetermined number of secondary components selected from the registered components based on component type information of the secondary components, wherein the predetermined number is based on the redundancy level;

means for changing roles of the predetermined number of secondary components to secondary; and

means for notifying the first component about the predetermined number of secondary components and the predetermined number of secondary components about the first component.

41. A mechanism configured to manage a plurality of high-availability-aware components in a networked computer system, the mechanism comprising:

a mechanism configured to register the plurality of high-availability-aware components to be managed; and

a mechanism configured to dynamically allocate roles and assignments to registered components of the plurality of high-availability-aware components to achieve a desired redundancy level based on component type information.

42. The mechanism of claim 41, further comprising:

a mechanism configured to respond to an error by changing roles and assignments of the registered components.

43. The mechanism of claim 41, further comprising:

a mechanism configured to provide information to the registered components so that related components among the registered components may communicate to achieve the desired redundancy level.

44. The mechanism of claim 41, further comprising:

a mechanism configured to perform administrative actions on the registered components in response to a request from an external management agent.

45. The mechanism of claim 41, further comprising:

a mechanism configured to maintain additional information relevant to managing the registered components.

46. The mechanism of claim 45, wherein the additional information

includes information regarding software release domains, component relationships, and protection groups.